

## A NEW SPECIES OF GENUS *Harmochirus* SIMON, 1885 FROM BANGLADESH (ARANEAE : SALTICIDAE)

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### ABSTRACT

A new jumping spider species, *Harmochirus ahmedi* sp. nov., of the family Salticidae is described with another newly recorded species of the same genus, *Harmochirus brachiatus* (Thorell, 1877), from Srimongal, Dist. Moulavibazar (Sylhet), Bangladesh. Illustrations, generic diagnosis and key to the species are provided herewith.

**Keywords:** New species, *Harmochirus*, Araneae, Salticidae, Bangladesh.

### INTRODUCTION

Jumping spiders of the genus *Harmochirus* Simon, 1885 are one of the important members in the crop-fields, gardens and forests of Bangladesh. The genus *Harmochirus* was first established by Simon in 1885 with the type-species *Ballus brachiatus* Thorell, 1887. The genus at present comprises only 9 species in the world fauna (World spider Catalog, 2016; Proszynski, 2016; Logunov & Marusik, 2000), but only 3 species from the Indian Sub-continent (Tikader, 1977; Keswani, *et al.*, 2012). Reports on these spiders are scarce in the fauna of Bangladesh except Okuma *et al.* (1993), Begum & Biswas (1997), Biswas (1995) and Biswas & Raychaudhuri (2012). Contributions on this genus in different parts of the globe are listed in the World spider Catalog (2016).

Considering the importance of these arachnids, the present paper is a part of the survey of jumping spider fauna in the Srimongal tea states, Dist. Moulvibazar of Bangladesh. It contains description of a new species *H. ahmedi* sp. nov. together with a report on another newly recorded species from the states.

### MATERIAL AND METHODS

Srimongal is a rural area of the district Moulavi bazar, situated in the north-eastern part of the country. The district with many tea estates including Bangladesh Tea Research Institutes (BTRI) are situated within the area. The tea fields contain vast tea plants areas and larger shade trees within the tea fields throughout the areas.

The spider specimens were collected from different areas of the tea-fields by hand and jerking of tea plants over an inverted umbrella situated underneath the plants. Collected specimens were paralyzed with chloroform in large glass jars and after sometimes transferred to 70% alcohol in a petridish for relaxation of body muscles. The specimens were then preserved in Audman's preservative (90 parts 70% alcohol + 5 parts glycerine + 5 parts glacial acetic acid) for future study. The entire study was done following Kaston (1972) and Tikader (1987).

The identity of the species were later confirmed from the 'Zoological Survey of India', Kolkata. Drawings of necessary body-parts were done by Camera lucida fixed with Stereo

Binocular Microscope. The types are at present in the collection of the Department of Zoology, Khulna Government Womens' College and will be deposited to the Museum of the Department of Zoology, University of Dhaka, Dhaka-1000, Bangladesh, in due course of time.

## RESULTS

### SYSTEMATICS

#### Family SALTICIDAE Blackwall, 1841

#### Genus *Harmochirus* Simon, 1885

#### Type-species: *Ballus brachiatus* Thorell, 1877

*Harmochirus* Simon, 1885. Bull. Soc. Zool. Fr., 10 : 440.

Thorell, 1895: 239; Narayan, 1915: 393; Roewer, 1954: 1020; Tikader, 1977: 410; Yaginuma, 1986: 236; Paik, 1987: 9; Chen & Zhang, 1991: 304; Proszyński, 1990: 153; Logunov & Wesolowska, 1992: 116; Ikeda, 1993: 136; Peng *et al.*, 1993: 78; Okuma *et al.*, 1993: 79; Logunov *et al.*, 1997: 3; Platnick, 1997: 887; Xiao & Wang, 2005: 527; Biswas, 2009: 263; World Spider Catalog, 2016, version 17.5; Proszyński, 2015, version 15.0.

**Diagnosis:** Body very small to small, dark-brown, with nearly rounded abdomen, clothed with hairs and spines. Cephalothorax on the level of eye-III (PLE) broad. Eyes usually brown or pearly-white in some parts; anterior median eyes 3 times larger than anterior laterals, ringed with black band; posterior lateral eyes situated nearer or on the lateral margin of carapace. Chelicerae brown, strong, with few teeth (1-3) on the margin. Maxillae and labium brown, elongate or pot-like, both scopulate anteriorly. Legs usually short; first legs enlarged with tibial segment swollen or wide; metatarsi and tarsi clothed with brown, strong spines.

Abdomen broad, rounded or oval, clothed with hairs and spines; lateral spinnerets in some elongate.

**Distribution:** Africa and Asia.

#### Key to species

1. Cephalothorax nearly equal to the abdomen, rectangular, posteriorly wide, dorsum with deep black patch; posterior row of eyes situated on the posterior lateral margin (Fig. 1a); outer margin chelicerae with 2 teeth and inner margin with 1 divided tooth (Fig. 1b); abdomen elongate oval; male palp with sharp pointed tibial apophysis..... ***Harmochirus brachiatus***

-Cephalothorax larger than abdomen, not rectangular, medially wide, dorsum without black patch (Fig. 2a); posterior row of eyes situated on the median lateral marginal line; each of outer and inner margins of chelicerae with 3 teeth (Fig. 2b); abdomen nearly rounded; male palp without long, tibial apophysis (Fig. 2f)..... ***Harmochirus ahmedi* sp. nov.**

#### 1. *Harmochirus brachiatus* (Thorell, 1877)

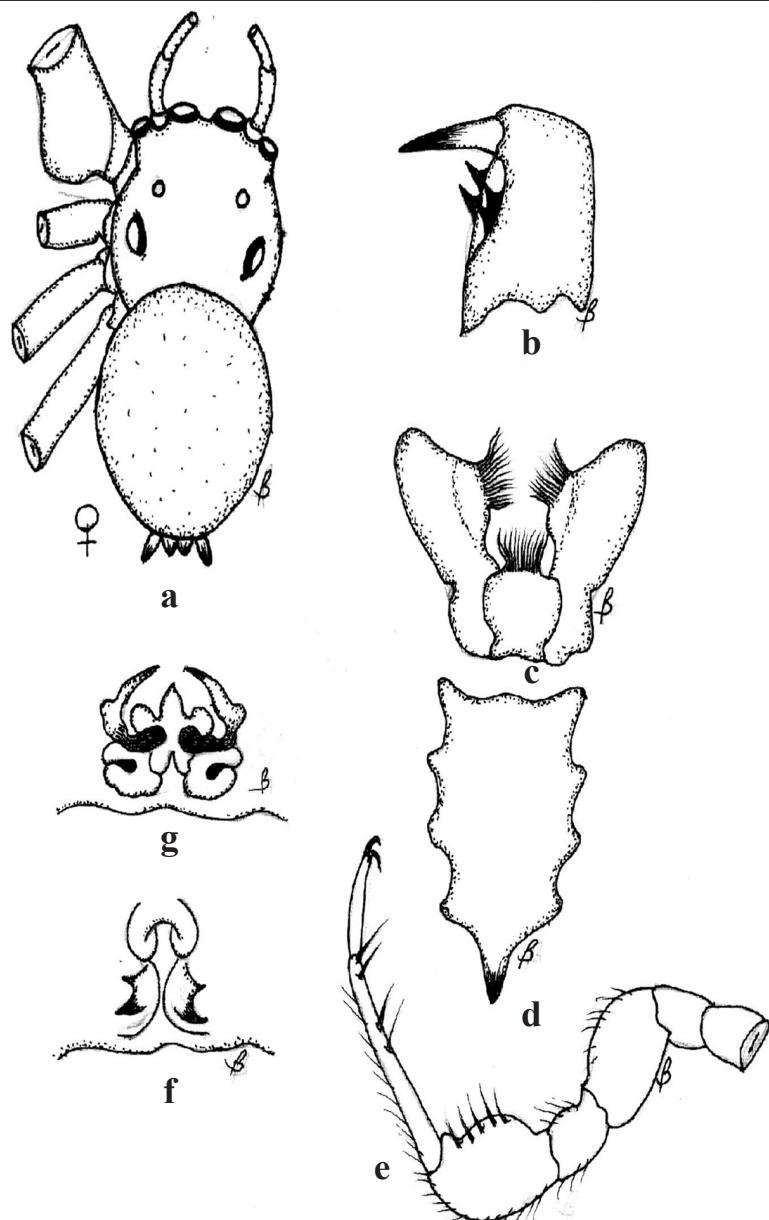
(Figure 1 a-g)

*Ballus brachiatus* Thorell, 1877. Ann. Mus. Star. Nat. Genova, 10: 626.

*Harmochirus malaccensis*: Simon, 1885: 441; *Harmochirus brachiatus*: Thorell, 1892: 250; Tikader, 1977: 410; Yin & Wang, 1979: 30; Zabka, 1985: 205; Feng, 1990: 205; Peng *et al.*, 1993: 79; Okuma *et al.*, 1993: 78; Barrion & Litsinger, 1995: 90; Peng *et al.*, 2002: 8; World Spider Catalog, 2016, version 16.0; Proszyński, 2015, version 15.0.

**Material examined:** 1 male, BTRI, Srimongal, Dist. Moulavi Bazar) 5.V.1995, Coll. V. Biswas; 2 females, Hobiganj, Dist. Moulavi Bazar, 12.07.1996, Coll. V. Biswas; 1 male, Madhav Kundu, Dist. Sylhet, 12.III.1996, Coll. V. Biswas; 2 females, Sunamganj, Dist. Sylhet, 07.VII.1997, Coll. V. Biswas; 1 female, Faridpur, 18.IX.1997, Coll. V. Biswas; 1 male & 2 females, Jessore, 18.X.1997, Coll. V. Biswas; 1 male, Harinarayanpur, Dist. Kustia, 12.XI.1997, Coll. V. Biswas.

**Distribution:** BANGLADESH: Srimongal, Habiganj, Madhav Kundu, Sylhet, Faridpur, Jessore and Kustia; INDIA; CHINA; JAPAN; TAIWAN; THE PHILIPPINES; KOREA; INDONESIA (World Spider Catalog, 2016; Proszynski, 2015; Peng *et al.*, 2002; Barrion & Litsinger, 1995; Okuma *et al.*, 1993; Keswani *et al.*, 2012).



**Figure 1** *Harmochirus brachiatus* (Thorell, 1877). a) whole body, dorsal view; b) chelicera; c) maxillae and labium; d) sternum; e) first leg; f) epigynum; g) internal genitalia.

**2. *Harmochirus ahmedi* sp. nov.**

(Figure 2 a-f)

**General:** Body small, dark brown. Total length 5.00 mm. Carapace 3.15 mm long, 1.55 mm wide, 1.00 mm height; abdomen 1.85 mm long, 1.89 mm wide and 1.05 mm height.

**Cephalothorax:** Slightly longer than wide, dorsomedially raised, anterior margin nearly straight, posteriorly narrowing. Eyes pearly-white, dissimilar, anterior medians larger than anterior laterals, each ringed with black basal band (Figure 2a); second row of eyes minute; posterior row straight and placed marginally. Chelicerae brown, strong, each of inner and outer margins with 3 teeth (Figure 2b). Maxillae brown, sandal-shaped, longer than wide, anteriorly scopulate (Figure 2c). Labium brown, small, pot-like, anteriorly scopulate (Figure 2c). Sternum brown, elongate, posteriorly pointed, anterior margin nearly straight (Figure 2d). Leg short, brown, strong; 1st leg large with femur and tibial segment swollen; tibiae ventrally with short, strong spines; metatarsi and tarsi clothed with long, strong spines (Figure 2e); leg formula 1432 and the measurements (in mm) are shown in Table 1.

**Table 1** Measurements (mm) of leg segments of *Harmochirus ahmedi* sp. nov.

Leg	Femur	Patella	Tibia	Metatarsus	Tarsus	Total
I	1.28	0.52	1.00	1.20	0.90	4.90
II	0.90	0.48	0.90	1.00	0.50	3.78
III	1.10	0.55	1.00	1.10	0.72	4.47
IV	1.20	0.58	1.00	1.20	0.85	4.83

Male palp elongate, clothed with hairs and spines; cymbium blunt, embolus coiled over tegulum; tibial apophysis small, pointed (Figure 2f).

**Abdomen:** nearly rounded, brown, clothed with sharp pointed hairs and spines. Ventrally slightly lighter than dorsum. Spinnerets short, arranged ventro-posteriorly.

Female unknown.

**Type-specimen:** Holotype male in spirit.

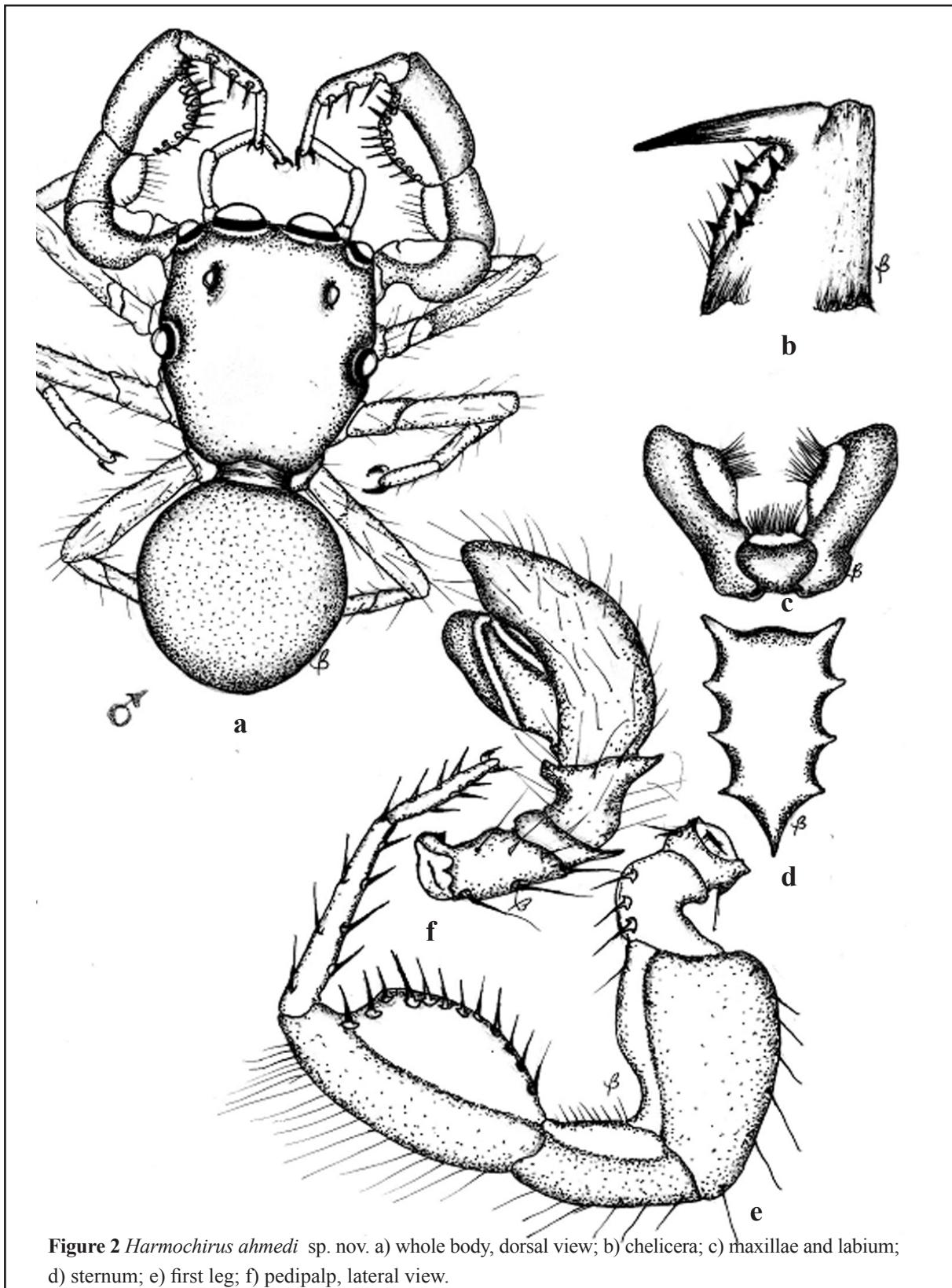
**Type-locality:** Srimongal (Dist. Moulavi Bazar), Bangladesh Tea Research Institute (BTRI) garden.

**Etymology:** The species is named in honour of Dr. Main Uddin Ahmed, Director, Bangladesh Tea Research Institute (BTRI), Srimongal, Dist. Moulavi Bazar.

**Remarks:** The species *Harmochirus ahmedi* sp. nov. appears close to *H. brachiatus* (Thorell, 1877) in general appearance but it may easily be separated out by the following characters: (1) Cephalothorax dorsum of *H. brachiatus* with a deep black field but in *H. ahmedi* sp. nov. it is normal; (2) Cheliceral dentition of both species is quite different. (3) Structure of maxillae, labium and sternum are different. (4) Male palp and its different parts are different morphologically and (5) Structure of 1st leg and its spination are totally different.

Also, none of the *Harmochirus* species of Indian Sub-continent and elsewhere resemble the present one (*H. ahmedi* sp. nov.). The species, is therefore, described as new to science.

The types are at present in the collection of the Department of Zoology, Khulna Govt. Womens' College, Khulna and will be deposited in the Museum of the Department of Zoology, University of Dhaka in due course of time.



**Figure 2** *Harmochirus ahmedi* sp. nov. a) whole body, dorsal view; b) chelicera; c) maxillae and labium; d) sternum; e) first leg; f) pedipalp, lateral view.

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### REFERENCES

**Barrion, A.T. & Litsinger, J.A. (1995).** *Riceland spiders of South and Southeast Asia*. CABI-IRRI, 700p.

**Begum, A. & Biswas, V. (1997).** A list of spider fauna of Barisal division, Bangladesh. *Bangladesh Journal of Zoology*, 25(2): 207-210.

**Biswas, V. (1995).** *Studies on the spider fauna (Araneae:Arachnida) of Bangladesh*. Ph.D. thesis, Department of Zoology, Calcutta University, 622p + 50 plates.

**Biswas, V. & Raychaudhuri, D. (2012).** Studies on the jumping spiders of Bangladesh (Araneae: Salticidae). *Records of Zoological Survey of India*, (in press).

**Chen, Z.F. & Zhang, Z.H. (1991).** *Fauna of Zhejiang, Araneida*. Zhejiang Science and Technology Publishing House, 356p.

**Ikeda, H. (1993).** Redescription of the Japanese spiders *Harmochirus kochiensis* and *Marpissa ibarakiensis* (Araneae : Salticidae ). *Acta Arachnologica*, 42(2): 135-144.

**Kaston, B.J. (1972).** *How to know the spiders*. 2<sup>nd</sup> edition, WMC Brown & Co., Iowa, 289p.

**Keswani, S., Hadole, P. & Rajoria, A. (2012).** Checklist of spiders (Arachnida:Araneae) from India. *Indian Journal of Arachnology*, 1(1): 101-129.

**Logunov, D.V. & Marusik, Y.M. (2000).** *Catalogue of the jumping spiders of the northern Asia. (Arachnida: Araneae: Salticidae)*. KMK Scientific Press, Ltd., Moscow, 299p.

**Logunov, D.V. & Wesolowska, W. (1992).** The jumping spiders (Araneae: Salticidae) of Khabarovsk Province (Russian far east). *Annales Zoologici Fennici*, 29: 113-149.

**Logunov, D.V., Ikeda, H. & Ono, H. (1997).** Jumping spiders of the genera *Harmochirus*, *Bianor* and *Stertinius* (Araneae: Salticidae) from Japan. *Bulletin of the National Science Museum*, Series A, 23(1): 1-16.

**Narayan, K. (1915).** Notes on ant-like spiders of the family Attidae in the collection of Indian Museum. *Records of the Indian Museum*, Calcutta, 11(5): 393-406.

**Okuma, C., Kamal, N.Q., Hirashima, Y., Alam Z. & Ogata, T. (1993).** *Illustrated monograph on the rice-field spiders of Bangladesh*. IPSA-JICA, Salna, Gazipur, 93p.

**Paik, K.Y. (1987).** Studies on Korean salticid (Araneae ) III. Some new record species from Korea or South Korea and supplementary describe for two species. *Korean Arachnology*, 3(1): 3-21.

**Peng, X.J. & Li, S.Q. (2002).** Two jumping spiders from Guangxi, China. *Acta Zootaxonomica Sinica*, 27(3): 469-472.

**Peng, X.J., Xie, L.P., Xiao X.Q. & Yin, C.M. (1993).** *Salticids in China*. Hunan Normal Univ. Press, 269p

**World Spider Catalog (2016).** World Spider Catalog. Natural History Museum Bern, online at <http://wsc.nmbe.ch>, version 17.5, accessed on {7th July, 2016}

**Proszyński, J. (1990).** *Catalogue of Salticidae, Araneae*. WSRP, Siedlce, 366p.

**Proszyński, J. (2015).** Salticidae (Araneae) of the world. Online at <http://salticidae.org/salticid/main.htm> (accessed on 8th September, 2016 ).

**Tikader, B.K. (1977).** Description of a jumping spider *Harmochirus brachiatus* (Thorell, 1877) with a new record from India. *Journal of Bombay Natural History Society*, 73(2): 410-411.

**Tikader, B.K. (1987).** *Handbook Indian spiders*. Zoological Survey of India, Kolkata, 251p.

**Xiao, X.Q. & Wang, S.P. (2005).** Description of the genus *Harmochirus* from China (Araneae: Salticidae). *Acta Zootaxonomica Sinica*, 30(3): 527-528.

**Zabka, M. (1985).** Systematic and Zoogeographic study on the family Salticidae (Araneae) from Vietnam. *Annales Zoologici*, Warszawa, 39 (11): 197-485.